

54-000410US.ST25.txt  
 SEQUENCE LISTING

<110> The Scripps Research Institute  
 Anderson, J C  
 Schultz, Peter G

<120> COMPOSITIONS OF ORTHOGONAL LEUCYL-tRNA AND AMINOACYL-tRNA  
 SYNTHETASE PAIRS AND USES THEREOF

<130> 54-000410PC

<140> PCT/US 04/022061  
 <141> 2004-07-07

<160> 72

<170> PatentIn version 3.2

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Thr Arg Thr Phe Thr Ile Gly Asp Ala Phe Ala Arg Tyr Met Arg Met  
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55

60

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Pro Ile Ile Gly Leu Ala Glu Leu Ile Ala Lys Arg Asp Glu Arg Thr  
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Gln Leu Thr Thr Pro Glu Lys Ile Val Glu Tyr Phe Ser Arg Glu Ala  
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Arg Tyr Cys Pro His Asp Gln Asn Pro Val Glu Asp His Asp Leu Leu  
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195 200 205

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Thr Val Phe Gly Val Thr Asn Ile Trp Val Lys Pro Thr Thr Tyr Val  
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Ile Ala Glu Val Asp Gly Glu Lys Trp Phe Val Ser Lys Glu Ala Tyr  
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Glu Lys Leu Thr Tyr Thr Glu Lys Lys Val Arg Leu Leu Glu Glu Val  
260 265 270

Asp Ala Ser Gln Phe Phe Gly Lys Tyr Val Ile Val Pro Leu Val Asn  
275 280 285

Arg Lys Val Pro Ile Leu Pro Ala Glu Phe Val Asp Thr Asp Asn Ala  
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Thr Gly Val Val Met Ser Val Pro Ala His Ala Pro Phe Asp Leu Ala  
305 310 315 320

Ala Ile Glu Asp Leu Lys Arg Asp Glu Glu Thr Leu Ala Lys Tyr Gly  
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 Ile Asp Lys Ser Val Val Glu Ser Ile Lys Pro Ile Val Leu Ile Lys  
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 Thr Asp Ile Glu Gly Val Pro Ala Glu Lys Leu Ile Arg Glu Leu Gly  
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 Val Lys Ser Gln Lys Asp Lys Glu Leu Leu Asp Lys Ala Thr Lys Thr  
 370 375 380  
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 Asn Tyr Ala Gly Met Lys Val Ser Glu Ala Lys Glu Arg Val His Glu  
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 Ile Glu Ser Leu Ser Asp Ser Thr Ile Tyr Met Ala Tyr Tyr Ile Leu  
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 Ala Lys Tyr Ile Asn Ala Gly Leu Leu Lys Ala Glu Asn Met Thr Pro  
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 Glu Phe Leu Asp Tyr Val Leu Leu Gly Lys Gly Glu Val Gly Lys Val  
 545 550 555 560  
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## 54-000410US.ST25.txt

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 Ile Leu His Ala Ala Glu Tyr Asp Ser Asp Ala Asp Trp Lys Ser Arg  
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 675 680 685  
 Lys Glu Asn Tyr Leu Lys Glu Val Gly Glu Leu Thr Thr Leu Asp Arg  
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 Trp Leu Val Ser Arg Met Gln Arg Ala Ile Lys Glu Val Arg Glu Ala  
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 770 775 780  
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 785 790 795 800  
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 Asp Pro Arg Leu Glu Asp Ala Thr Gly Glu Leu Tyr Lys Ile Glu His  
 370 375 380  
 Ala Arg Gly Val Met Ser Ser His Ile Pro Val Tyr Gly Gly Met Lys  
 385 390 395 400  
 Val Ser Glu Ala Arg Glu Val Ile Ala Asp Glu Leu Lys Asp Gln Gly  
 405 410 415  
 Leu Ala Asp Glu Met Tyr Glu Phe Ala Glu Arg Pro Val Ile Cys Arg  
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430

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 Lys Tyr Ser Asp Asp Ala Trp Lys Asp Leu Ala His Arg Cys Leu Asp  
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 Ser Thr Ile Tyr Met Ala Tyr Tyr Thr Ile Ala His Arg Leu Arg Glu  
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705 710 715 720

Gln Glu Ala Leu Tyr Leu Leu Lys Lys Asp Val Asp His Tyr Leu Lys  
725 730 735

Arg Val Glu Gly Arg Val Asp Asp Glu Val Lys Ser Val Leu Ala Asn  
740 745 750

Val Leu His Ala Trp Ile Arg Leu Met Ala Pro Phe Ile Pro Tyr Thr  
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Ala Glu Glu Met Trp Glu Arg Tyr Gly Gly Glu Gly Phe Val Ala Glu  
770 775 780

Ala Pro Trp Pro Asp Phe Ser Asp Asp Ala Glu Ser Arg Asp Val Gln  
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Val Ala Glu Glu Met Val Gln Asn Thr Val Arg Asp Ile Gln Glu Ile  
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Met Lys Ile Leu Gly Ser Thr Pro Glu Arg Val His Ile Tyr Thr Ser  
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